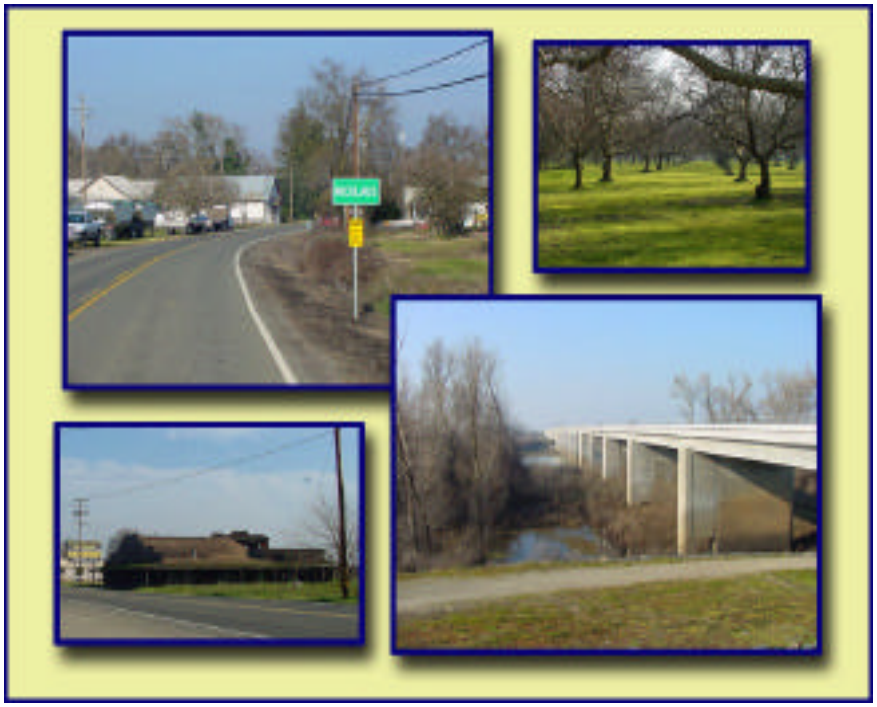
State Route 99
Safety and Operational Improvement Project



DRAFT ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL ASSESSMENT

State Route 99 in Sutter County, California
03-SUT-99-13.9-23.0/27.0-37.0
(*PM 8.7-14.3/16.8-23.0*)
03-1C3200

June 2002

General Information About This Document

What's in this document?

This document is an Environmental Impact Report/Environmental Assessment, which examines the potential environmental impacts of alternatives for the proposed project located in Sutter County, California. The document describes why the project is being proposed, alternative methods for constructing the project, the existing environment that could be affected by the project, and potential impacts from each of the alternatives.

What should you do?

- Please read this Environmental Impact Report/Environmental Assessment.
- We welcome your comments. If you have any concerns regarding the proposed project, please attend the Public Information Meeting and/or send your written comments to Caltrans by the deadline. Submit comments via regular mail to Caltrans, Attn: Jeff Loudon, Environmental Management M1 Branch, P.O. Box 911, Marysville, CA 95901; submit comments via email to *jeff_loudon@dot.ca.gov*.
- Submit comments by the deadline: _____.

What happens after this?

After comments are received from the public and reviewing agencies, Caltrans may (1) give environmental approval to the proposed project, (2) undertake additional environmental studies, or (3) abandon the project. If the project were given environmental approval and funding were appropriated, Caltrans could design and construct all or part of the project.

For individuals with sensory disabilities, this document is available in Braille, large print, on audiocassette, or computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: *Jeff Loudon, Caltrans Environmental Management M1 Branch, P.O. Box 911, Marysville, CA 95901; (530) 741-4598* Voice, or use the California Relay Service TTY number, 1-800-735-2929.

SCH Number: 200109206
03-Sut-99-13.9-23.0/27.0-37.0
(PM 8.7-14.3/16.8-23.0
03-1C3200

State Route 99 Safety & Operational Improvement Project

From KP 13.9 north of the SR 70/99 split to KP 37.0 south of Yuba City, in Sutter County, California

Draft Environmental Impact Report/Environmental Assessment

Submitted Pursuant to: (State) Division 13, Public Resources Code
(Federal) 42 USC 4332(2)(C) and 49 USC 303

U.S. DEPARTMENT OF TRANSPORTATION
Federal Highway Administration, and
THE STATE OF CALIFORNIA
Department of Transportation

Responsible Agencies:
California Department of Fish and Game

5-29-02
Date of Approval

John Webb
Chief, Office of Environmental Services
California Department of Transportation

6/14/02
Date of Approval

for Division Administrator
Federal Highway Administration

The following persons may be contacted for additional information concerning this document:

Jeffrey Loudon, Chief
Environmental Management, M-1
California Department of Transportation
703 B Street
Marysville, CA 95901
(530) 741-4598

Maiser Khaled
Chief, District Operations – North
Federal Highway Administration
980 9th Street, Suite 400
Sacramento, CA 95814
(916) 498-5020

Abstract

The proposed action would upgrade SR 99 to a 4-lane facility with continuous median and left-turn lane from the SR70/99 junction to Sacramento Avenue (KP 23.0/PM 14.3), and upgrade to conventional highway or expressway standards between Central Avenue (KP 27.0/PM 16.8) to just north of O'Banion Road (KP 37.0/PM 23.0). In addition, the project provides for a new two-lane bridge on the East side of and adjacent to existing Feather River Bridge. The purpose of the proposed project is to improve safety and provide concept Level of Service (LOS) D for the year 2015. The estimated cost is $68 to $80 million. Three build alternatives and the no build are being considered in this document. The proposed project could affect Waters of the U.S., Central Valley Chinook salmon and steelhead, Swainson's Hawk, and Giant Garter Snake. Additionally the project could also affect agricultural lands, floodplains, and water quality. Mitigation is proposed to reduce potential impacts. Sutter and Yuba counties are preparing a Habitat conservation Plan to address impacts from this and other projects in those counties. Comments on this document are due by 8/9/02 and should be sent to Jeffrey Loudon at the above address.

Summary

The Draft Environmental Impact Report/Environmental Assessment (DEIR/EA) has been prepared to meet requirements of the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) for projects that could have adverse impacts on the environment. It is based on detailed technical studies for the purpose of informing the public and to present reasonable alternatives that would avoid or minimize impacts.

The following summary identifies major items of importance to decision-makers regarding the proposed project. Detailed project information is presented in the body of the document.

Proposed Action

The California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) are proposing a highway improvement project on State Route 99 (SR 99) in Sutter County, between the SR99/70 Junction (wye) to Sacramento Avenue, and from Central Avenue to O'Banion Road. The proposed project would widen SR 99 to a 4-lane facility with continuous median and left-turn lane from the SR70/99 junction to Sacramento Avenue (KP 23.0/PM 14.3), and upgrade to conventional highway or expressway standards between Central Avenue (KP 27.0/PM 16.8) and O'Banion Road (KP 37.0/PM 23.0). In addition, the project provides for a new two-lane bridge on the East side of and adjacent to existing Feather River Bridge #18-26. The project will improve traffic safety and reduce congestion. Improvements would include:

- Realign the east leg of O'Banion Road to match the west leg alignment.
- Add a west leg to the Nicolaus Road connection to SR 99 at KP 19.0 (PM 11.8) to eliminate left-turn movements and improve safety.
- Install signals at the intersections of SR 113 and Garden Highway with SR 99 as part of Phase I of this project. Signal warrants will be met by the scheduled construction time for Phase I.

The section between Central Avenue (KP 27.0/PM 16.8) and O'Banion Road (KP 37.0/PM 23.0) would be constructed in two phases. Phase I will realign and/or widen SR 99 from a two lane to four lane facility with at-grade intersections at Garden

Highway and Route 113. Phase II would add interchanges at the intersections of SR 99 with Route 113 and at Garden Highway.

The project has been divided into three segments to facilitate design and construction programming.

Segment 1 was programmed for funding in the 1998 State Transportation Improvement Plan (STIP) from Interregional Improvement Program (ITIP) and Regional Transportation Improvement Program (RTIP) funds. Funding for Design, Right of Way acquisition and Right of Way engineering for Segment 4 was programmed in the 2000 STIP from ITIP, RTIP and TEA-21 Demonstration funds. In addition, funding for Segment 4's construction capital and construction support are proposed to be programmed in the 2002 STIP (ITIP and RTIP) funds. Funding for Design, Right of Way acquisition and engineering for Segment 2 are programmed in the 2002 STIP (RTIP) funds. Construction capital and construction support for Segment 2 are proposed to be programmed in the 2004 STIP (ITIP and RTIP) funds.

Segment 3 (Figure S-1), which was constructed in September 2000 is located between Sacramento Avenue (KP 22.0, PM 13.7) and Wilkie Avenue (KP 29.2, PM 18.2). This segment was funded by the 1996 State Transportation Improvement Plan (STIP) from Interregional Improvement Program (ITIP) and Regional Transportation Improvement Program (RTIP) funds. Segment 3 provides an additional lane in each direction and a continuous, two-way left-turn lane.

Project Alternatives

Three build alternatives are being considered to address the need for improvements along SR 99 in Sutter County. These alternatives are a result of a number of Project Study Reports (PSR) which studied various alternatives and variations outlined in the previous section. The alternatives were selected based on several factors including benefits, capital cost, feasibility, environmental impacts and ability to address the stated project purpose and need.

Alternative 1: Widen existing facility.

Alternative 2: Widen existing facility with a northern bypass of the town of Tudor.

Alternative 3: Widen existing facility with a southern bypass of the town of Tudor.

- Segment 1 begins near SR 99/70 junction KP 13.9 (PM 8.7) and ends south of Nicolaus Road KP 18.8 (PM 11.7).
- Segment 2 begins south of Nicolaus Road KP 18.8 (PM 11.7) and extends to north of Sacramento Avenue KP 23.0 (PM 14.3).
- Segment 4 starts near Central Avenue KP 27.0 (PM 16.8) and ends just north of O'Banion Road KP 37.0 (PM 23.0).

All build alternatives would include Segment 3 (Figure S-1), which was constructed in September 2000 and other project features such as the new two-lane bridge over the Feather River would be the same for all the build alternatives (Figure S-1).

A No Build Alternative is also being presented to allow the reader of this document to compare the effects of the build alternatives with a future scenario where no expressway or interchanges are present along SR 99. Chapter Two gives a detailed discussion of project alternatives. Figure 1-2 a-c shows the project location.

Potential Impacts and Mitigation

The following table shows the potential impacts and mitigation for the proposed project. Details on each item in the table are presented in Chapters 3-4.

Table S-1 - Summary of Major Potential Impacts From Alternatives

Potential Impact		Alternative 1	Alternative 2	Alternative 3	No Build Alternative	Minimization/ Mitigation
Farmland converted Prime and Unique Hectares (acres)		54(133)	76(212)	70(236)	0	None Required
Housing displacements		9	8	3	0	Relocation Assistance
Consistency with Sutter County General Plan		Yes	Yes	Yes	No	None Required
Noise	# of receptors ≥Leq 67 dBA	32	27	15	68	Not Feasible & Reasonable
Water Quality		Construction Impacts	Construction Impacts	Construction Impacts	No Impact	Construction measures
Floodplain Encroachment		Transverse @ Feather River	Transverse @ Feather River	Transverse @ Feather River	No Impact	None Required

Air quality	Construction Impacts	Construction Impacts	Construction Impacts	No Impact	Construction measures
Total wetlands area ha (ac)	.22 (.56)	.22 (.56)	.22 (.56)	No Impact	Creation/ acquisition of habitat
Total Water of the U.S. area ha (ac)	1.4 (3.6)	1.4 (3.6)	1.4 (3.6)	No Impact	Creation/ acquisition of habitat
Salmonids/Salmonid Habitat ha (ac)	Potential Take 2.4 (6.0)	Potential Take 2.4 (6.0)	Potential Take 2.4 (6.0)	No Impact	Construction measures, revegetation
Swainson's Hawk ha (ac)	49 (120)	62 (152)	51 (126)	No Impact	Preservation/ acquisition of habitat; Construction Measures
Giant Garter Snake Habitat ha (ac)	18 (44)	22 (54)	18 (44)	No Impact	Preservation/ acquisition of habitat; Construction Measures
Cultural resources	No Adverse Effect	No Effect	No Effect	No Impact	Avoidance
Visual quality	Feather River/ Overcrossing (phase II)	Feather River/ Interchange (phase II)	Feather River	No Impact	Revegetation/ landscaping
Cumulative impacts	No Cumulative Impacts	No Cumulative Impacts	No Cumulative Impacts	No Impact	HCP
Growth inducement	Not Substantial	Not Substantial	Not Substantial	No Impact	None Required
Number of potential hazardous waste sites	7	6	5	No Impact	To Be Determined
Potential 4(f) property (s)	1	1	1	No Impact	Avoidance
Volume of fill imported as % of total cut & fill volume	35	55	47	0	N/A
Maximum projected cut and fill heights	Cut-2 m Fill – 8.8 m	Cut – 2 m Fill – 8.8 m	Cut-2 m Fill – 8.8 m	0	N/A

Areas of Potential Concern

Biological Resources

Sensitive resources are concentrated within segments 1 and 2, of all the build alternatives, would directly impact Waters of the U.S., Swainson's Hawk habitat (State threatened species), Giant Garter Snake habitat (federal threatened species), Salmonids species (Spring/ Winter Run Chinook, Central Valley Steelhead, and

Sacramento Splittail) riparian habitat, and Northwest Pond Turtle habitat. A detailed analysis of impacts are found in Chapter 3.

Although, the impacts to sensitive resources are similar, Alternative 3 has the least amount of impacts to Swainson's Hawk habitat as compared to the other build alternatives.

The proposed project would utilize 12.0 ha (30 ac) of the Feather River Wildlife Area (which is located between the levees along the Feather River). Thirty acres would be used for staging (temporary) and only 1.6 ha (4.0 ac) would be permanently impacted. This utilization of public land for transportation projects would constitute a Section 4(f) usage. A Programmatic Section 4(f) evaluation is found in Appendix D.

Mitigation

Mitigation for impacts to wetlands and Waters of the U.S. and associated species would be determined as part of the Section 404 (Clean Water Act) and Section 7 (Endangered Species Act) requirements.

Impacts to wetlands and other water would be mitigated through replacement habitat at a ratio to ensure no net loss.

No exotic or invasive landscape species would be used adjacent to sensitive habitat within the project area.

Water quality Best Management Practices (BMP's) would be implemented to avoid sedimentation impacts to the Feather River, wetlands and other waters.

Loss of Swainson's hawk foraging habitat would be mitigated based on recommendations by the California Department of Fish and Game (CDFG) (CDFG 1994).

Cumulative Impacts

NEPA defines cumulative impacts as those that result from the incremental impact of a proposed action when added to other past, present and reasonably foreseeable future actions (*40 CFR 1508.7*). For the proposed project, the area for evaluation of cumulative effects is the SR 70/149/99 corridor between southern Sutter County and Chico. For this analysis, the area of cumulative impacts considered includes southern and eastern Sutter County, western Yuba County, and south-central and western Butte County (primarily up to SR149) Figure S-2 identifies the major proposed Caltrans/FHWA projects in this area.

Figure S-1 – Cumulative Impact Effect Area

Pacific Flyway, Swainson's Hawk, Giant Garter Snake, and Salmonid species are important sensitive resources found within the cumulative effects area. It would be difficult to totally avoid these resources and as such, would contribute to the cumulative loss of these resources in the region. Impacts from the SR 99 project are, however, small when considering the overall amount of these resources in the cumulative effects area. Mitigation requirements and best management practices will be implemented to minimize the impacts of this project.

Other non-federal projects that would most likely occur in the SR 70/149/99 corridor include mostly residential and commercial development. These non-federal actions are largely based on build-out and growth patterns consistent with approved land use plans. Because the extent, timing and nature of future growth is governed by development firms and the local planning departments and elected officials that oversee and approve development plans, environmental impacts and required mitigation measures should be addressed by these agencies as growth is planned or discussed. Currently, Butte, Sutter and Yuba counties are committed to pursuing Habitat Conservation Plans (HCPs) to address impacts from projects within their counties. Chapter 3 discusses growth impacts, and Chapter 4 provides a detailed discussion of the cumulative impacts related to the proposed project and other related projects.

Issues to be Resolved

Issues to be resolved before implementation of the proposed project are listed below.

- Biological resource mitigation (pending consultation with resource agencies).
- Final project design
- Right of way acquisition and utility relocation
- Permits and approvals

Permits and Approvals

Permits and Approvals

The following permits and/or approvals would be required before implementation of the proposed project:

- Endangered Species Act – Section 7 consultation for threatened and endangered species with USFWS and National Marine Fisheries Service (NMFS)
- Streambed Alteration Agreement (Section 1601) from the CDFG
- Section 401 certification/waiver from the Regional Water Quality Control Board (RWQCB)
- Section 10 of the Rivers and Harbors Act of 1899 Permit from the U.S. Coast Guard
- Section 404 of the Clean Water Act Permit from the U.S. Army Corp of Engineers (ACOE)
- California Endangered Species Act – Section 2081 Permit for Incidental Take from the California Department of Fish and Game (CDFG)

Notice of Determination

Following public review of this Draft EIR/EA and consideration of comments, a preferred alternative would be chosen. Upon certification of the Final EIR, Caltrans would file a Notice of Determination (NOD).

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List of Abbreviated Terms

Abbreviation	Term
ac	acre
AC	asphalt concrete
ACOE	US Army Corps of Engineers
ADT	Average Daily Traffic
APE	Area of Potential Effects (Cultural Resources)
BCAG	Butte County Association of Governments
BCM	Butte County Meadowfoam (special status plant)
BMP	Best Management Practices (Water Quality)
Caltrans	California Department of Transportation
CDFG	California Department of Fish & Game
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide (Air Quality)
dBA	Decibels (noise level measurement)
DEIR	Draft Environmental Impact Report (CEQA document – State)
DEIS	Draft Environmental Impact Statement (NEPA document – Federal)
EA	Environmental Assessment
EPA	Environmental Protection Agency
ESA	Environmentally Sensitive Area
ESA	Endangered Species Act (federal)
ESU	Evolutionarily Significant Unit
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FPPA	Farmland Protection Policy Act
ft	foot / feet
FTIP	Federal Transportation Improvement Program
ha	hectare
HPSR	Historic Property Survey Report (cultural resources)
IS	Initial Study
Km	kilometer
KP	Kilopost
L_{eq}	Equivalent Noise level
LOS	Level of Service
m	meter
mi	mile
MTP	Metropolitan Transportation Program
MOU	Memorandum of Understanding
NAC	Noise Abatement Criteria
NEPA	National Environmental Policy Act
NES	Natural Environment Study (Biological Resources)

NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOP	Notice of Preparation
NRCS	Natural Resources Conservation Service
PG&E	Pacific Gas and Electric
PM	Postmile
ppm	Parts per million
PRC	Public Resources Code (State)
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SACOG	Sacramento Area Council of Governments
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SR	State Route
STIP	State Transportation Improvement Plan
TASAS	Traffic Accident and Surveillance Analysis System
TMP	Traffic Management Plan
TDM	Travel Demand Management
TSM	Transportation System Management
USC	United States Code
USEPA	US Environmental Protection Agency
USFWS	US Fish & Wildlife Service
UST	Underground storage tank (hazardous materials)

Chapter 1 Purpose and Need

1.1 Introduction

This project proposes to widen State Route 99 (SR 99) in Sutter County, from 2 to 4 lanes with a variable median (3.6 – 6.6 m) (11.8 – 25.6 ft.), from the SR99/70 Junction to Sacramento Avenue, and from Central Avenue to O'Banion Road. For design and construction phasing the project has been divided in 3 segments (Figure 1-1, 2 a-c).

1.2 Need for Proposed Action

Existing Facility

Currently, State Route (SR) 99 within the project limits is a two-lane conventional highway with numerous private driveways. State Route 99 is considered a inter-regional route in terms of its vital role in the movement of agricultural and commercial goods within California and the Central Valley. It serves inter-regional and local commuter traffic. Within the project limits, SR 99 lane widths are 3.66 meters (12.0 ft) with 2.44-meter (8.0 ft) shoulders. The terrain is flat with 90-degree curves at the Garden Highway and Route 113 intersections. The curve radius at Garden Highway is 260 meters (853 ft), which does not meet current design standards. Left and right-turn channelization is provided at both intersections. Right of way width varies from 15.2m to 52.0m (49.9 – 170.6 ft). Current traffic operating characteristics are rated at a Level of Service (LOS) of D as shown in Table 1-1.

Table 1-1 - Traffic Level of Service (LOS)

LOS	Description
A	Primarily free-flow operations. Vehicles are unimpeded in their ability to maneuver in the traffic stream.
B	Reasonably free-flow, free-flow speeds generally maintained. Lowest average spacing between vehicles is 330 ft.
C	Speeds at or near free-flow. Freedom to maneuver within traffic stream is noticeably restricted and lane changes require more vigilance.
D	Speeds begin to decline slightly and density begins to increase with increasing flows. Freedom to maneuver is more noticeably limited, and traffic stream has little space to absorb disruptions.
E	Operation at capacity. Operations at this level are volatile, as there are virtually no usable gaps in the traffic stream. Maneuvering within traffic stream is extremely limited.
F	Breakdown in vehicular flow. Such conditions generally exist within queues forming behind breakdown points. Number of vehicles arriving at a point is greater than the number of vehicles that can move through it.

Source: Highway Capacity Manual, Transportation Research Board, 1994.

Figure 1-1 – State Route 99 Improvements

Figure 1-2a – Project Location Map Segment 1

Figure 1-2b – Project Location Map Segment 2

Figure 1-2c – Project Location Map Segment 4

Capacity Issues

Based on the traffic volumes from 1998, the SR99 corridor from south of Yuba City to the 70/99 junction in Sutter County operated at a Level of Service (LOS) D. Traffic operations would deteriorate to LOS F (congestion), if no improvements are made by the year 2015. The following table presents projected traffic demand with or without the project:

Table 1-2 - Projected Traffic Demand

Traffic Volumes Table									
Location and Segment	**1998**			**2015**			**2025**		
	ADT	**Peak Hour**	**LOS**	**ADT**	**Peak Hour**	**LOS ***	**ADT**	**Peak Hour**	**LOS ***
Segment 1** KP 13.9/18.8 (PM 8.7/11.7)	10,700	1,100	D	19,500	1,950	F/B	22,100	2,210	F/B
Segment 2** KP 18.8/23.0 (PM 11.7/14.3)	10,700	1,100	D	20,200	2,020	F/B	22,500	2,250	F/B
Segment 3** KP 20.8/31.7 (PM 12.9/17.2) Built in 2000	10,700	1,100	D	20,200	2,020	F/B	22,500	2,250	F/B
Segment 4** KP 27.0/37.0 (PM 16.8/23.0)	13,900	1,300	D	20,800	2,080	F/B	24,500	2,450	F/B

*F/B: Level of Service without/with the proposed project is built.
**The SR99 corridor between SR70/99 to Yuba City was originally separated into 7 segments for construction and programming purposes.

The traffic mix on this section of SR99 includes 10% trucks and a significant number of agricultural vehicles. This vehicle mix, together with the above mentioned near capacity operating conditions, makes it difficult for faster vehicles to find adequate passing opportunities. As a result, higher than average fatal accident rates were prevalent in this section of SR99 until 1997.

Safety Issues

Table 1-3 indicates existing collision data for segments 1 and 2 from July 1, 1998 to June 20, 2001, show that the Actual Collision Rate is less than the statewide Average

Collision Rate for similar highway facilities. While, during the same time period the Actual Collision Rate for segment 4 was above the statewide average.

Segment 3 (KP 20.8/31.7 (PM 12.9/17.2)), which was built in 2000, had a fatal rate well above the statewide average. The average before improvements was .138, while the statewide average was .029. This is shown in Table 1-3.

Table 1-3 – Segment 3 Accident Rates

Location	Number of Collisions (per million vehicle miles)			Statewide Average		
	Fatal	F+I***	Total	Fatal	F+I	Total
Segment 3*	0.139	0.52	0.96	0.029	0.50	1.0
Segment 3***	0.018	0.21	0.47	0.029	0.43	0.91

*Segment 3 accident rates before improvements. (11/01/1994-10/31/1997)
**Segment 3 accident rates after improvements. (07/01/1998-06/30/2001)
***Fatal + Injury

Due to the fact that traffic is increasing and the road will operate near capacity during afternoon peaks in the near future, the addition of one lane in each direction and a continuous left-turn lane is warranted to accommodate existing and future volumes of traffic and improve safety. Table 1-4, below, shows accident history on the corridor.

Table 1-4 - Accident Rates

Traffic Accident Data*										
Location	Number of Collisions				Collision Rate(per million vehicle miles)					
					Actual			Average		
	Tot	Fatal	Inj.	F+I**	Fatal	F + I	Tot	Fatal	F+I**	Tot
Segment 1 KP 13.9/18.8 (PM 8.7/11.7)	12	0	8	8	.000	.23	.34	.035	.42	.86
Segment 2 KP18.8/23.0 (PM 11.7/14.3)	18	0	6	6	.000	.22	.67	.035	.45	.93
Segment 3** KP 20.8/31.7 (PM 12.9/17.2) Built-in 2000	27	1	11	12	.018	.21	.47	.029	.43	.91
Segment 4 KP 27.0/37.0 (PM 16.8/23.0)	41	3	14	17	.044	.25	.61	.037	.49	1.02

*From TASAS Table B.
**Fatal + Injury

Segment 1 & 2

The current Average Daily Traffic (ADT) along this section of SR 99 is 10,700 resulting in a Level of Service (LOS) of D (high density, stable flow). By the year 2015, traffic is estimated to increase to an ADT of 19,500 for Segment 1, and 20,200 for Segment 2. This traffic increase will result in a LOS F for these two segments if no improvements are done. However, after the widening of these two segments, the operation of these two sections will improve to LOS B.

Segment 4

This segment of SR 99 currently operates at LOS D (high density, stable flow). Without improvements the LOS will deteriorate to LOS F (congestion) by 2015. The Sutter County General Plan has established the concept LOS for this corridor as LOS D.

Table (1-4) summarizes the collision data from TASAS "Table B" within the project limits for the three-year period from July 1, 1998 to June 30, 2001). The majority of accidents were concentrated at the three major intersections within the project limits (Garden Highway, State Route 113, and O'Banion Road) and in Tudor where multiple business driveways exist. The accidents were primarily broadside or rear end collisions. Addition of a continuous, two-way left-turn lane and traffic signals or interchanges at Garden Highway and SR 113 should help to decrease the frequency of accidents in these areas.

System Linkage

This project is consistent with the future planning for SR 99, which is discussed in the Caltrans Transportation Concept Report and District System Management Plan. The Sacramento Area Council of Governments (SACOG) has fully supported this project (by Resolution No. 36-1997) for inclusion in the State Transportation Improvement Program known as STIP.

State Route 99 is part of the Interregional Road System identified for investment of State Transportation Funds, which is vital to the agricultural and commercial economy of the Central Valley. The route also serves as a mail access between several small cities and urban services available in Sacramento Metropolitan area.

Relationship With Other Modes of Transportation

The following public transit options are available along SR 99 within the project area:

- Public transit is provided by Yuba-Sutter Transit, with seven southbound buses from Yuba City/Marysville to Sacramento and nine northbound buses from Sacramento each workday.
- Class III Bicycle facility (Road shoulders) on existing SR 99.

The proposed project would enhance these modes of public transit by providing an improved facility with less congestion and fewer accidents.

1.3 Purpose of the Proposed Project

The objectives of the proposed project are to:

- Improve traffic safety.
- Increase capability to accommodate the existing and future volumes of traffic at a level of service (LOS) D or better.

1.4 Project Background

In June 1995, Sutter County participated with the Sacramento Area Council of Governments (SACOG) in a regional survey of transportation needs for the Yuba-Sutter area. The survey included asking the public to rate ten different transportation projects ranging from expanding public transportation, providing a new Feather River crossing or widening either SR 70 or 99. Of the county residents who responded, 72% of the respondents rated passing lanes on SR 99 as their preferred transportation improvement.

In response to this survey, a Project Study Report (PSR) for passing lanes on SR 99 between the Feather River Bridge (KP 20.6, PM 12.8) and Garden Highway (KP 31.7, PM 19.7) was prepared. The PSR was approved in March 1996. One section of SR 99, between Sacramento Avenue (KP 22.0, PM 13.7) and Wilkie Avenue (KP 29.2, PM 18.2) (Segment 3) was approved for funding in the 1996 STIP. The project provided an additional lane in each direction and a continuous, two-way left-turn lane. Construction was completed in September 2000.

A PSR for Segment 1 was previously approved on February 18, 1998. The PSR included two other segments from KP 18.81/22.5 and KP 27.09/31.46. It also included an expressway alternative, which was rejected based on the 70/99 Corridor Study completed in 1990 to address regional transportation needs, and due to lack of funding. There has been no right of way acquired for this project.

Between 1996 and 1998 several fatal accidents occurred along SR 99 from the Route 70/99 Junction to Garden Highway. This focused public attention on the entire two-lane portion of SR 99 from the SR 70/99 Junction to Lincoln Road near Yuba City. Caltrans and the California Highway Patrol (CHP) instituted various measures to reduce accidents. Among the improvements were the addition of raised pavement markers along the center and edge lines, installation of informational and warning signs, reduction of the maximum speed limit from 65 mph to 60 mph, and the increased presence of the CHP. Since implementation of these improvements, the accident rate within the project limits has dropped to near the statewide average for this type of facility.

In 1998, in conjunction with Sutter County and Yuba City, Caltrans reevaluated the planning strategy for SR 99 in the Tudor area. Due to the potential realignment of SR 99 in the Tudor area, it was decided to proceed with development of the segment of SR 99 from just north of O'Banion Road (KP 36.4, PM 22.6)(previously segment 6) to Lincoln Road. The Project Report for this segment (EA 03-1A462) was approved in August 2000 and proposes to widen SR 99 along the existing alignment to four lanes with a continuous, two-way left-turn lane. This operational improvement is expected to begin construction in the summer of 2002.

1.5 Project Description

The project proposes to upgrade State Route (SR) 99 to a 4-lane facility with continuous median and left-turn lane from the SR70/99 (KP 13.9/PM 8.7) junction to Sacramento Ave (KP 23.0/PM 14.3 (Segments 1 & 2)), and upgrade to conventional highway or expressway standards between Central Avenue (KP 27.0/PM 16.8) and O'Banion Road (KP 36.5/PM 22.7 (Segment 4)). In addition, the project provides for a new two-lane bridge on the east side of and adjacent to existing Feather River Bridge #18-26 (Figure 1-2b). Additional work will include:

- Realign the east leg of O'Banion Road to match the west leg alignment.

- Add a west leg to the Nicolaus Road connection to SR 99 at KP 19.0 (PM 11.8) to eliminate left-turn movements and improve safety.
- Construct the new Feather River Bridge east of SR 99 to match the widening to the east of segments 1 and 2.
- Install signals at the intersections of SR 113 and Garden Highway with SR 99 as part of Phase I of this project. Signal warrants will be met by the scheduled construction time for Phase I.

The segment between Central Avenue (KP 27.0/PM 16.8) and O'Banion Road (KP 37.0/PM 23.0) would be constructed in two phases. Phase I will realign and/or widen SR 99 from a two lane to four lane facility with at-grade intersections at Garden Highway and SR 113. Phase II will add interchanges at the intersections of SR 99 with SR 113 and at Garden Highway.

Chapter 2 Alternatives

2.1 Alternative Development Process

As a response to a 1995 Sacramento Area Council of Governments (SACOG) regional survey, various Project Study Reports (PSR) were prepared and approved to address perceived needs and improvements. In addition, between 1996 and 1998 several fatal accidents occurred along SR 99 from the SR 70/99 junction to the Garden Highway intersection. This focused public attention on the entire two-lane segment of SR 99 from SR 70/99 wye to Lincoln Road south of Yuba City. To address the public concerns, several PSRs were prepared for passing lanes between Feather River Bridge and Garden Highway (March 1996), improvements and widening with a new bridge over the Feather River between the 70/99 wye and Ashford Avenue (February 1998), and widening SR 99 from Central Avenue to 0.2 kilometers (.12 miles) north of O'Banion road (October 2000).

For the proposed project, three alternatives, which have evolved from the various PSRs covering this area, are discussed. One alternative widens the existing facility while the other two alternatives propose new alignments.

2.1.1 Alternatives Considered and Eliminated

A number of alternative variations have been considered in past PSRs, which cover the project. The following alternatives were evaluated and eliminated from consideration based on impacts to resources, feasibility, ability to meet traffic concerns, operational and safety issues, and cost.

Median Width Variations & Staggered Passing Lane

Previous PSR looked at alternatives with no medians, staggered passing lanes, and 4.2 meter (17.8 feet) medians. After in-depth review, the Project Development Team (PDT) deemed a four-lane alternative without a continuous median/left-turn lane would compromise operational and safety. Such alternatives raised concerns that vehicles would be making unprotected left turns from the fast lane of the passing section on a high volume highway. Additionally, the unprotected turning movements would increase in difficulty due to the larger numbers of vehicles in opposing traffic lanes. In addition, increasing the median width to 4.2 m (17.8 ft) would compromise

conforming to the existing segment 3 (3.6 m) (11.8 ft) median, which was built in 2000.

Widening the Existing Facility to the West

A Preliminary Environmental Assessment Report (PEAR) for segments 1 and 2 indicated that there was an increased risk of impacting a larger number of structures and having a higher impact to the environment if widening was conducted on the west side of the existing facility. In addition, to conform to Segment 3 (built in 2000), it was deemed appropriate to widen east of the existing facility.

Widening of the Feather River Bridge

In the project report titled "Improvements On SR 99" In Sutter County Between KP 14.04 and 31.46 PSR dated February, 1998, two alternatives were proposed for the Feather River Crossing. Alternative 1 was to widen the existing bridge to accommodate five 3.6m (11.8 ft) lanes and two 2.4 m (7.9 ft) shoulders. The second alternative was to build a new two-lane bridge.

Alternative one was rejected due to the age of the existing structure and potential structural problems with adding three additional lanes.

Furthermore, it was decided to build a new two-lane bridge on the east side of the existing Feather River bridge to conform with Segment 3 (built in 2000). In addition, building the new bridge on the east would facilitate construction staging and traffic control.

Expressway Alternative

An expressway alternative for the entire corridor was rejected based on the 1990 "State Routes 70 and 99 Corridor Study" which selected SR 70 as the freeway corridor, and due to funding concerns.

2.1.2 Alternatives Selected for Detailed Study

Three build alternatives are being considered to address the need for improvements along SR 99 in Sutter County. These alternatives are a result of a number of Project Study Reports (PSR) which evaluated various alternatives and variations outlined in the previous section. The alternatives were selected based on several factors

including benefits, capital cost, feasibility, environmental impacts and ability to address the stated project's purpose and need.

The No Build Alternative is presented to allow the reader of this document to compare the effects of the build alternatives with a future scenario where no improvements are made to this portion of SR 99.

2.2 Project Alternatives

Project alternatives involve widening existing SR 99 to four lanes, bypassing the town of Tudor to the north or bypassing Tudor to the south. The alternatives have been divided into three segments to facilitate design and construction programming. Segments 1 and 2 are common in all three alternatives. Final selection of an alternative will only be made after a full evaluation of environmental impacts, full consideration of comments from public hearing, and before the approval of the Final EIR/EA. Alternatives are shown in Figure 2-1, and typical roadway cross-sections are in Figure 2-2a-c and 2-3.

2.2.1 Common Features in Build Alternatives

Segment 1 & 2

This project proposes to widen Segments 1 and 2 from 2 lanes to 4 lanes with a continuous median/left-turn lane. All widening will occur east of the existing SR 99 throughout the project limits (Figure 2-2a). The highway will maintain conventional highway standards with full 2.4 m (7.9 ft) shoulders and a minimum 6.0 m (19.7 ft) clear recovery zone. This project proposes a continuous 3.6 m (11.8 ft) wide median/left-turn lane. Horizontal and Vertical alignments will follow the existing alignment (Figure 2-2b). The proposed right of way will be 52.0 m (170.6 ft) wide except at the intersections of Striplin Road and Powerline Road where the proposed R/W limits vary from 48.5 m (159.1 ft) to 58.0 m (190.2 ft).

Feather River Bridge

Segment 2 includes a new 928 m (3044.6 ft) long bridge east of the existing Feather River Bridge (Bridge Number 18-26) Figure (2-3). Once the new bridge is completed, the existing bridge structure will be used for southbound traffic and the new bridge structure will be use for the northbound traffic.

Segment 4

This segment would be improved in two phases. Phase I will realign and/or widen SR 99 from 2 lanes to 4 lanes along the existing alignment with at-grade intersections at Garden Highway and SR 113. Phase II will add interchanges at the intersections of SR 99 with SR 113 and at Garden Highway (Figure 2-2b).

Following are the additional project features for Segment 4:

- Two 3.6 m (11.8 ft) travel lanes in each direction.
- A 3.6 m (11.8 ft) continuous median/two-way left-turn lane
- Design speed of 110 km/hr (68 mph).
- Traffic signals and lighting (Phase I) and interchanges with lighting (Phase II) at the SR 99 intersections with Garden Highway and SR 113.

2.2.2 Alternative 1

This alternative proposes to widen SR 99 along the existing alignment from 2-lanes to 4-lanes with a continuous left-turn lane (see Figure 2-1). Curve radii at the Garden Highway and SR 113 intersections would be increased to provide a 110-km/h (68 mph) design speed. Phase I would install traffic signals at the SR 99/Garden Highway and SR 99/113 intersections. Phase II would replace the at-grade intersections with interchanges.

Estimated cost of this alternative, including right of way and construction, with signalized at-grade intersections (Phase I) is estimated to be $29 million. The estimated cost of the proposed interchanges (Phase II) is approximately $14 million. The total new right of way required would be 70.4 ha (174 ac).

2.2.3 Alternative 2

Alternative 2 proposes to realign SR 99 north of Tudor (see Figure 2-1). State Route 113 would be extended and Garden Highway would be improved to meet at a single at-grade intersection (Phase I) with SR 99. The portion of SR 99 south of Garden Highway would be widened along the existing alignment. Phase II would provide an interchange at the SR 99/113/Garden Highway intersection.

Because most of the residences within the project limits are south of Garden Highway, this alternative will impact more property owners along SR 99 than the other alternatives by moving the highway closer to their residences or businesses. Realigned portions of SR 99, Garden Highway and SR 113 would also impact several parcels north of Garden Highway as the new alignment bisects these parcels.

Estimated cost of this alternative, including right of way and construction, with signalized, at-grade intersections (Phase I) is estimated to be $31 million. The proposed interchange (Phase II) would add approximately $13 million. The new right way need for this alternative would be 85.8 ha (212 ac).

2.2.4 Alternative 3

Alternative 3 proposes to realign SR 99 south of Tudor (see Figure 2-1). The segment of SR 99 north of SR 113 would be widened along the existing alignment. Phase I will provide signalized intersections at the SR 99/113 and at the SR 99/Garden Highway intersections. Phase II would provide an interchange at the SR 99/113 intersection and a ramp overcrossing at the SR 99/Garden Highway intersection for drivers heading southbound on Garden Highway to southbound SR 99.

This alternative will impact the least number of residences or businesses. However, several agricultural parcels would be bisected by the new alignment. The estimated cost of this alternative, including right of way and construction, with signalized, at-grade intersections (Phase I) is estimated to be $35 million. Interchanges (Phase II) would add approximately another $12 million. New right of way for this alternative would be 95.5 ha (236 ac).

2.2.5 No Build Alternative

Under the No Build Alternative, conditions along the SR99 corridor would remain as they currently exist. The No Build Alternative would not cause environmental impacts and no mitigation would be required. However, traffic projections indicate SR 99 would not accommodate traffic demand at the accepted route LOS D in the year 2015, as shown in Table 1-1. The No Build Alternative would not correct existing safety problems and accident rates would likely increase as traffic demand increases.

Section 1.2 presented the LOS, capacity, safety, and highway system issues that warrant consideration of the proposed project. The No Build Alternative would not address these needs, and would not meet the objectives of the project.

Figure 2-1 – All Alternatives

Figure 2-2a – Typical Cross Section

Figure 2-2b – Typical Cross Section

Figure 2-2c – Typical Cross Section

Figure 2-3 – Feather River Bridge Cross Section